

REMARKS**A. As to the Specification**

The Applicant has amended the specification to add the reference to the parent application, along with its status, at the top of the first page.

B. As to the Claims

Consistent with the election requirement, the non-elected claims have been cancelled. Claims 5, 6, and 15 have also been cancelled. The remaining claims are claims 1, 2, 3, 4, 13 and 14. Amendments have been made to address the Examiner's rejections under 35 U.S.C. §112. Amendments have also been made regarding the rejections under 35 U.S.C. §102(b) in view of U.S. Patent No. 4,085,510 to Kirschke (1978). These specific amendments will be discussed in detail. Of course, issues pertaining to the cancelled claims are moot and will not be discussed.

The elected species is shown in FIG. 12. All the structures now recited in the claims can be understood with respect to FIGs. 12-18 and 21-23, along with the supporting text in the specification. The following detailed discussion refers to these figures.

The term "vertical deflection bar" has been substituted for the term "vertical test arm." This name (denoted as element number 104) is consistent with the numbering in FIG. 12 and the selection of the elected species. The Examiner objected to the use of the term "conventional flexible means" in describing the attachment of the vertical deflection bar to the base portion. The word "movable" has been substituted in place of the objectionable phrase.

The Examiner also objected to the statement that the vertical deflection bar can "elastically move" downward. The intended meaning of this phrase was that vertical deflection bar (104) was slidably connected to the base, with the two compression springs (114) biasing it upward until its

motion is arrested by the two stop collars (116) (see FIG. 13). In other words, it was free to move up and down without undergoing plastic deformation. The claims have been amended to more clearly recite this structure. The claims now simply state that the vertical deflection bar is free to move downward. The biasing means (the springs) are now positively recited as a separate element.

The remaining claims were rejected under 35 U.S.C. §102(b) in view of U.S. Patent No. 4,085,510 to Kirschke (1978). Although the amendments may have rendered these rejections moot, the Applicant will nevertheless discuss the applicability of Kirschke to the present invention as claimed. Kirschke presents two embodiments. The first embodiment is shown in FIGs. 1 and 2. It includes a deflection arm (37) with an attached ruler (40) with graduation marks (43). A TV camera is pointed toward the ruler. It transmits an image of the ruler and its position with respect to a measuring reference (41).

The sled is pulled through the pipe from right to left with respect to the orientation shown in the views. Assuming that the ruler is sufficiently reflective to be viewed for some distance, it cannot be seen from behind the sled (since it is occluded by the TV camera and the deflection arm). Further, even if the ruler can be seen for some distance, the graduation marks would be too small to discern. Thus, it conveys no information via reflective means over a significant distance. The first embodiment in Kirschke is therefore wholly dependent upon the use of the TV camera.

Kirschke's second embodiment is shown in FIGs. 3-6. It uses a spring loaded tape-measure reel in place of the ruler. It also employs a more rigid deflection arm. In this embodiment, the tape can be seen from the rear of the sled. However, the Kirschke disclosure makes plain that the tape does not provide any useful information beyond a very short distance.

This fact is made plain by the description that the second embodiment depends on towing a camera sled immediately behind the main sled, as depicted in FIG. 5. *See Kirschke* at Col. 3, Lines 55-58. The camera sled focuses a TV camera on the tape at close range. The camera then transmits the image of the tape back to the user.

Thus, Kirschke does not disclose a device allowing a visual reflective indication of pipeline deflection over a significant distance, nor does it disclose the use of a reflective indicator which is visible from the rear of the sled.

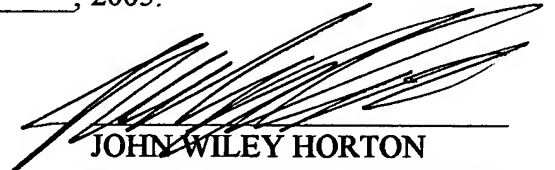
The remaining independent claims now positively recite the mounting of a reflector on the rear portion of the sled, in a position where a user can shine a light on the reflector from the rear, at a considerable distance, and see the reflector. The occluding device then provides a meaningful indication of pipeline deflection by either occluding or exposing the reflector. The more sophisticated embodiment of the reflector card (with multiple reflectors) and the window card (with multiple windows) is described in claim 13. With the addition of these new positively recited elements, the claims are now patentably distinct with respect to Kirschke.

Some additional comments regarding the claims may be helpful. Claims 1 and 2 recite the general use of indication via the exposure or the occlusion of a reflector. These claims correspond to the use of a single reflector and moving exposure/occlusion device, such as any one of the reflectors on reflector card (132) moving with respect to a particular reflector. An example would be second window (146) moving with respect to second reflector (140) in FIG. 17B of the present disclosure. Claims 3 and 4 recite the addition of a plumb to claims 1 and 2, which is useful to ensure that the sled remains properly oriented.

Claim 13 adds the detail of a reflector card and moving window card having multiple reflectors and windows, in order to provide more detailed information regarding the pipeline deformation. Claim 14 adds a plumb to claim 13.

In view of the above amendments and remarks, the Applicant believes that the claims are in condition for allowance. Accordingly, the Applicant respectfully requests that the Examiner reconsider the rejections.

Respectfully submitted this 3rd day of May, 2005.



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